

REMARKS

Applicants have canceled claims 14, 21 and 22 from consideration and have amended claims 1, 4, 7, 9, 13, 15, 16, 19, 24 25 and 27. The affected claims are shown in a section entitled Marked-Up Version of Claims Indicating Changes using standard underlining and bracketing format to highlight the changes made. No new matter is introduced by the entry of this amendment.

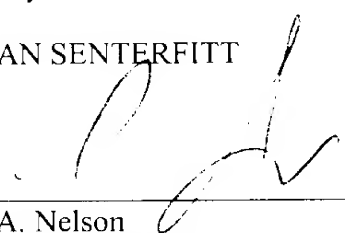
It is believed that no fee is due for the entry of this amendment. However, should any fees be required for any reason, the Commissioner is authorized to charge said fees from Deposit Account No. 50-0951.

Applicants respectfully request consideration and allowance of all claims.

Respectfully submitted,

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MARKED-UP VERSION OF CLAIMS INDICATING CHANGES

1. (Amended) A [device] portable system for detecting a selected analyte, comprising:
 - a stably transformed bacterium containing a promoterless *lux* gene cassette having a regulatory element for a selected analyte inserted in front of the *lux* gene cassette;
 - a support matrix onto which the bacterium is attached; [and]
 - an encapsulating material to contain said bacterium attached to the support matrix,wherein the encapsulated bacterium emits visibly detectable light in the presence of the selected analyte[.] , and
a portable detection device.
4. (Amended) The device of claim 1 wherein the analyte is naphthalene, toluene, ethylbenzene, 2, 4-dichlorophenoxyacetic acid, β -phenyl ethylamine, phenols or biphenyls.
7. (Amended) The device of claim [4] 6 wherein the regulatory element further comprises a *mer* operator.
9. (Amended) The device of claim [6] 8 wherein the *P. fluorescens* is *P. fluorescens* 5R.
13. (Amended) A genetically modified bacterium responsive to divalent mercury, said bacterium being encapsulated and containing a *merRo/p-lux* gene stably integrated into the bacterial chromosome, wherein said bacterium produces a bioluminescent protein in the presence

of divalent mercury.

15. (Amended) The genetically modified bacterium of claim [14] 13 that is encapsulated in a matrix selected from the group consisting of alginate, carrageenan, acrylic vinyl acetate copolymer, latex, polyvinyl chloride polymer, sol-gels, agar, agarose, micromachined nanoporous membranes, polydimethylsiloxane (PDMS), polyacrylamide, polyurethane/polycarbamyl sulfonate and polyvinyl alcohol.

16. (Amended) The encapsulated genetically modified bacterium of claim [14] 13 that is attached to a support matrix.

19. (Amended) A portable kit for detecting mercury II ion comprising the [genetically modified bacterium of claim 13 adhered to an immobilization support] system of claim 2 or 3 and instructions for use in detecting mercury ion.

24. (Amended) The kit of claim [23] 19 wherein the bacterium is *P. fluorescens* 5R.

25. (Amended) A mobile method for detecting mercury in water samples comprising: providing a plurality of stably transformed bioreporter bacterium genetically modified to contain a merRo/p-lux gene, said bacterium attached to a support matrix and disposed within protective packaging for preserving hydration of said bacterium;
removing said protective packaging;

contacting a water comprising sample suspected of containing mercury II ion with [a] said bioreporter bacterium [genetically modified to contain a *merRo/p-lux* gene;] and detecting the presence of the mercury ion when a visibly detectable luminescence is produced [.], said detecting using a portable detection device.

27. (Amended) The method of claim 25 wherein [the bioreporter is encapsulated or immobilized] said portable detection device comprises a naked eye, night vision equipment or a light-tight slide holder.